

REMARKS

In the above-referenced Office Action, the Examiner rejected claims 1-16. For the reasons discussed below, Applicant submits that the pending claims are in condition for allowance and such action is hereby requested.

The Prior Art of Record

The Examiner cites Hile and Helt in the section 102 rejections against some of the pending claims. These two references are discussed in detail below.

Hile

Hile discloses an air condition system adapted to make use of outside air with an economizer when conditions permit. The disclosed system has two modes of cooling operation. In the first mode, outside air is used because the outside air is cool enough to use to cool an enclosure. In the second mode, the outside is not cool enough to an enclosure and is not used.

At the start of operation of the air condition system, the fan motors are turned on after expiration of a delay.

When the air conditioning unit is in the cooling mode of operation the thermostat 46, including fan on control 47, signals the unit to become energized.... At this time power is supplied through wire 158 to fan relay FR-2 which acts to close fan relay contacts FR2-1 completing the circuit to time delay relay TDR-1. After a short time interval contacts TDR-1 close energizing fan contactor FC-1 through wires 101, 106, 107 and 108 thereby operating the fan at low speed... The unit operates with the fan circulating air for ventilation purposes at low speed at all times the unit is energized.

Applicant stresses that the cooling coils are not energized at this time. Further, the delay of Hile is used to delay operation of the fan speed (off/on). The delay of Hile is not used to delay operating the fan at a higher speed from a lower speed.

Thereafter, there are four levels ("Cool 1, Cool 2, Cool 3 and Cool 4") of operation using outside ambient air. In "Cool 1," the fans are operated at a high speed to circulate outside air through the enclosure. The cooling coils are not energized. In "Cool 2," "Cool 3" and "Cool 4", successive refrigeration circuits are energized, but the fans are already

operating at high speed. Thus, in none of these modes is air being moved through energized coils at two different speeds.

In the second mode of operation, outside air is not used because “enthalpy control 49 [senses] that the ambient air is at a high temperature and is not capable of being used to cool the enclosure[.]” The economizer is therefore closed. Again, there are four levels of operation (“Cool 1, Cool 2, Cool 3 and Cool 4”). In “Cool 1,” air is circulated without any refrigeration units in operation. In “Cool 2” and “Cool 3,” successive refrigeration circuits are energized and the fans are operating at low speed. In “Cool 4,” the fans are operated at high speed. The switch in fan speed is not based on any type of predetermined delay. Rather, the switch to a higher speed is based strictly on cooling demand—which may or may not occur.

Thus, Applicant stresses that Hile has absolutely no teaching or suggestion of delaying operation between a lower blower speed and a higher blower speed. Also, as noted above, the delay of Hile is used to only delay operation of the fan speed (off/on). Further, Hile at no point senses the humidity of the air being conditioned and, thus, has no suggestion of how to control such humidity. Indeed, Hile only senses ambient, outside air humidity to determine whether or not to use the economizer. The sensed humidity, to Applicant’s reading, is not used in any manner to operate to the refrigeration units or fans.

Helt

Helt discloses a system for reducing speed of a blower motor. The scenarios given for its use are as follows: (i) reduced airflow can be used in conjunction with a compressor operating at a reduced capacity, (ii) Reduced airflow can also be used in a pre-cooling mode where the refrigerant compressor is operated at a reduced capacity for reducing the humidity just prior to a full cooling cycle, (iii) Reduced airflow can also be used in a post-cooling or post-heating mode to recover residual heat in heat exchangers, and (iv) Operating an air cleaner between cooling or heating cycles. Applicant stresses that in none of these instances is the compressor operating at rated capacity. Rather, the compressor is operating at reduced capacity or not operating at all while the blower motor is operated at a reduced speed.

As the Examiner notes, the control of Helt provides a pre-cool period that in which a

compressor is run at a reduced capacity to provide a low cooling or dehumidification mode and to drive a blower motor at a reduced speed for reduced airflow. The present invention, however, eliminates the complexity of control over the compressor and changes speed of the blower motor without regard to compressor operation.

Claims 1,6 and 7 – Rejection under Section 102 : Hile

The Examiner has rejected claims 1,6, and 7 as anticipated by Hile. As described above, Hile has absolutely no teaching or suggestion of delaying operation between a lower blower speed and a higher blower speed. The delay of Hile is used to only delay operation of the fan speed (off/on). With respect to amended claim 1, Hile does not disclose or suggest a speed control that operates a blower motor at a first speed for a delay period when the cooling coil is energized and then to operate the blower motor at a second speed that is higher than the first speed. Accordingly, Applicant respectfully submits that amended claim 1 is in condition for allowance.

With respect to amended claims 6 and 7, Hile at no point senses the humidity of the air being conditioned. Hile senses ambient, outside air humidity. Because Hile does not sense the humidity of the air being conditioned, Hile neither teaches nor suggests the invention claimed by amended claims 6 and 7. Accordingly, Applicant respectfully submits that amended claims 6 and 7 are in condition for allowance.

Claims 1,2,4,13 and 16 – Rejection under Section 102 : Helt

The Examiner has rejected claims 1,2,4,13 and 16 as anticipated by Helt. As described above, Helt has no teaching or suggestion as to controlling the speed of only the blower. Rather, Helt in every instance combines reduced operation of the blower motor with reduced operation of the compressor. With respect to amended claims 1 and 13, Helt does not disclose or suggest a speed control that operates only the blower motor of the air handler. Accordingly, Applicant respectfully submits that amended claims 1 and 13 are in condition for allowance.

Claims 2,4 and 16 depend from claims believed to be in condition for allowance are allowable on at least those grounds.

Claims 7,9,11, and 14 – Rejection under Section 103a – Helt & Hile

The Examiner rejected claims 7,9,11 and 14 as unpatentable over Helt in view of Hile. Claim 7 has been amended and now is dependant from claim 1, a claim believed to be allowable for reasons previously discussed. Amended Claim 9 is dependant from claim 1, a claim believed to be allowable for reasons previously discussed. Claim 14 is dependant from claim 13, a claim believed to be allowable for reasons previously discussed. Accordingly, claims 7,9 and 14 are allowable at least due to their dependency from claims believed to be allowable. Claim 11 has been cancelled.

Additionally, with respect to claims 7 and 14, neither Helt nor Hile teach a humidistat for operational control of the outside air damper to close the outside air damper upon detection of an excessive humidity level in the air being conditioned. Hile teaches a humidistat that senses the humidity of outside air and Helt teaches a humidistat that operates a time delay based on the humidity of inside air. To Applicant's reading, the prior art of record presents no evidence to support the combination of Helt and Hile in the manner asserted by the Examiner. Accordingly, Applicant respectfully submits that amended claim 7 and claim 14 are in condition for allowance.

With respect to claim 9, to Applicant's reading, Helt and Hile either separately or combined do not teach a speed controller interconnected with a furnace circuit board, where the speed controller and furnace circuit board are configured to operate the blower motor. Accordingly, Applicant respectfully submits that amended claim 9 is in condition for allowance.

Claims 7,8,9,10,11, and 14 – Rejection under Section 103a – Helt, Hile, Espinosa & Obler

The Examiner rejected claims 7,8,9,11 and 14 as unpatentable over Helt and/or Hile in view of Espinosa or Obler. As discussed above, Hile and Helt have no teaching or suggestion as to controlling the speed of only the blower. To Applicant's reading, Obler and Espinosa do not supply this missing recitation. Accordingly, the combination of Helt/Hile & Obler / Espinosa are missing a recitation present in claims 1 and 13. Because claims 7,8,9,10 and 14 depend from either claim 1 or claim 13, both of which are believed to be allowable, claims 7,8,9,10 and 14 are allowable on at least those grounds. Claim 11 has been cancelled.

Claims 3,5,12,15, and 16 – Rejection under Section 103a

With respect to claims 3,5,12,15 and 16, the Examiner rejected these claims contending that optimal of workable ranges found by routine experimentation are not patentable. Applicant stresses that one of the insights of the Inventor is that conventional air conditioning systems can be modified to provide better moisture removal by controlling operation of the blower motor. Thus, these claims are directed to recitations covering the Inventor's insight and not routine experimentation. Additionally, these claims all depend from claims believed to be in condition for allowance and are allowable on those additional grounds.

New Claims 17-23

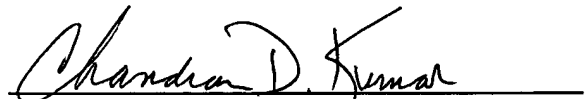
Applicant has entered new claims 17-23 to further claim the present invention.

CONCLUSION

Applicant respectfully submits that all pending claims have been placed in condition for allowance. The Examiner is invited to discuss any matter relating to this Office Action Response with applicants' attorneys. Madan, Mossman & Sriram check No. 13179 in the amount of \$225 is attached to cover the two-month extension fee. The Commissioner is hereby authorized to charge any under payment or credit any over payment deemed associated with this communication to Deposit Account No. 13-0010.(CUR-1001-US).

Respectfully submitted,

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